

IN THE DRAWINGS

The attached sheet of drawings includes changes to Figs. 1A-1C. This sheet, which includes Figs. 1A-1C, replaces the original sheet including Fig. 1A-1C.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4, 6, 8-13, and 17-27 are currently pending, Claims 1-4, 6, and 8-13 having been amended, Claims 17-27 having been added, and Claims 5, 7, and 14-16 having been canceled without prejudice or disclaimer. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, by original Claims 1, 5, 7, 8, 10; page 4, lines 20-29; page 20, lines 12-14; and Fig. 3.

In the outstanding Office Action, the drawings were objected to; Claims 1-3, 5-8, and 10-12 were rejected under 35 U.S.C. §102(b) as being anticipated by Hashimoto (U.S. Patent No. 6,486,544, hereafter “Hashimoto I”); Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hashimoto I in view of Hashimoto (U.S. Patent No. 6,670,700, hereafter “Hashimoto II”); Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hashimoto I in view of Sugimura (U.S. Patent No. 6,232,655); and Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hashimoto I in view of Baek et al. (U.S. Patent No. 6,835,598, hereafter “Baek”).

With respect to the objection to Figs. 1A-1C, Applicant respectfully submits that the amendment to the drawings, adding a “Prior Art” label to Figs. 1A-1C, overcomes this ground of objection.

With respect to the objection to drawings for not including reference numbers “E1” and “E2”, Applicant respectfully traverses this ground of objection. The specification refers to “E1” and “E2” as being the respective thicknesses of the transfer element 24 and the component 20, and that the spacer 30 may have a width greater than $E1 + E2$ (see specification, at page 6, lines 17-18 and page 7, lines 9-10). However, the specification does not specifically reference E1 and E2 as being in any of the figures. Therefore, Applicant

respectfully submits that E1 and E2 are clearly described in the specification and that they are not required to be shown in the figures. Therefore, Applicant respectfully requests that this objection be withdrawn.

With respect to the objection to Fig. 2A for reference characters “L1 and “L2” not being disclosed in the specification, Applicant respectfully traverses this ground of objection. Applicant submits that reference characters L1 and L2 are disclosed in the specification, for example, on page 6, lines 15 and 22-25. Therefore, Applicant respectfully requests that this ground of objection be withdrawn.

With respect to the objection to Fig. 3 for reference character “A” not being disclosed in the specification, Applicant respectfully traverses this ground of objection. Applicant submits that reference character “A” is disclosed in the specification, for example, on page 8, line 8. Therefore, Applicant respectfully requests that this ground of objection be withdrawn.

With respect to the rejection of Claim 1 under 35 U.S.C. 102(b), Applicant respectfully submits that the amendment to Claim 1 overcomes this ground of rejection. Amended Claim1 recites, *inter alia*,

an active element, comprising a semiconductor component comprising at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical means, an electromechanical means, and a MEMS, said active element having a first and a second face, the first face being provided with electrical connections, arranged on one side only of said active element,

Applicant respectfully submits that Hashimoto I fails to disclose or suggest at least these features of Claim 1.

Hashimoto I is directed to a semiconductor device for increasing a density of semiconductor chips attached to a circuit board. Fig. 5 of Hashimoto I shows an example of the semiconductor device in which a substrate 310 is bent so that semiconductor chips 320 and 330 are opposite to each other. The Office Action takes the position that semiconductor

chip 320 corresponds to the claimed “active element” and semiconductor chip 330 corresponds to the claimed “transfer element.” (See Office Action, at page 4).

Hashimoto I describes that the semiconductor chips are “for example, flash memory and SRAM, both SRAMs, both DRAMs, memory and ASIC, or an MPU and memory...” (See col. 6, lines 1-3).

However, Hashimoto I fails to disclose or suggest “an active element, comprising a semiconductor component comprising at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical means, an electromechanical means, and a MEMS,” as defined by amended Claim 1.

M.P.E.P. §2131 requires for anticipation that each and every feature of the claimed invention must be shown and requires for anticipation that the identical invention must be shown in as complete detail as contained in the claim.

Here, Hashimoto I has not disclosed every feature of Claim 1 in as complete detail as contained in the claim because the semiconductor chip described by Hashimoto I is not the same as “at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical means, an electromechanical means, and a MEMS.”

Therefore, Applicant respectfully submits that amended Claim 1 (and all associated dependent claims) patentably distinguishes over Hashimoto I.

Hashimoto II, Sugimura, and Baek have been considered but fail to remedy the deficiencies of Hashimoto I with regard to Claim 1. Therefore, Applicant respectfully submits that Claim 1 (and all associated dependent claims) patentably distinguishes over Hashimoto I, Hashimoto II, Sugimura, and Baek, either alone or in proper combination.

With respect to new Claim 17, Claim 17 recites, *inter alia*,

An electronic device comprising...at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS, being hybridized onto the first face of said active element.

Applicant respectfully submits that Hashimoto I, Hashimoto II, Sugimura, and Baek fail to disclose or suggest at least these features of Claim 17.

As discussed above, Hashimoto I fails to disclose or suggest an active element that includes at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS. Accordingly, Hashimoto I also fails to disclose or suggest “at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS, being hybridized onto the first face of said active element,” as defined by new Claim 17.

Moreover, Applicant submits that substrate 810 shown in Fig. 11 of Hashimoto I (and shown in similarly on Figs. 5 and 10) will prevent hybridization of a device onto semiconductor chip 320. For example, with regard to original Claim 9, the Office Action acknowledged that Hashimoto I fails to disclose or suggest a photon emission circuit or means hybridized on the first face of the electronic circuit (see Office Action, at page 6). The Office Action relies on Sugimura to remedy the deficiencies of Hashimoto I with regard to original Claim 9. Fig. 8 of Sugimura describes a photon emission circuit 22 on an electronic circuit 20. The Office Action takes the position that the photon emission circuit 22 can be combined with the device of Hashimoto I to detect electric signals derived from pixels (see Office Action, at page 7). However, Applicant respectfully submits that such a combination would not allow for detection of electric signals because the substrate 810 of Hashimoto I would cover a photodetector that is hybridized into the semiconductor chip. Therefore, one

of ordinary skill in the art would not be motivated to combine Hashimoto I and Sugimura as suggested by the Examiner.

Therefore, Applicant respectfully submits that new Claim 17 (and all associated dependent claims) patentably distinguishes over Hashimoto I.

Hashimoto II, Sugimura, and Baek have been considered but fail to remedy the deficiencies of Hashimoto I discussed above with regard to Claim 17. Therefore, Applicant respectfully submits that Claim 17 (and all associated dependent claims) patentably distinguishes over Hashimoto I, Hashimoto II, Sugimura, and Baek, either alone or in proper combination.

With respect to new Claim 27, Claim 27 recites, *inter alia*,

at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS, being hybridized onto the first face of said active element and covering at least part of said electrical connections of said first face of said active element.

Applicant respectfully submits that Hashimoto I, Hashimoto II, Sugimura, and Baek fail to disclose or suggest at least these features of Claim 27.

The Office Action takes the position that electrodes 322 shown in Fig. 11 of Hashimoto I correspond to the claimed “electrical connections” defined in original Claim 1 (see Office Action, at page 4). However, as discussed above with regard to Claim 17, the substrate 810 prevents using “at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS, being hybridized onto the first face of said active element.” Additionally, in Fig. 11 of Hashimoto I, interconnect pattern 312, bonding pattern 314, and substrate 810 are already covering the electrodes 322. Therefore, Applicant submits that it is not possible to have another hybridized device (such as the photodetector of Sugimura discussed above) also partially covering the electrodes 322.

Therefore, Applicant respectfully submits that Hashimoto I fails to disclose or suggest "at least one of a photon or radiation detector, a photon or radiation emission device, a mechanical or electromechanical device, and a MEMS, being hybridized onto the first face of said active element and covering at least part of said electrical connections of said first face of said active element," as defined by new Claim 27.

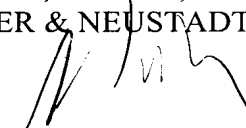
Thus, Applicant submits that new Claim 27 patentably distinguishes over Hashimoto I.

Hashimoto II, Sugimura, and Baek have been considered but fail to remedy the deficiencies of Hashimoto I discussed above with regard to Claim 27. Therefore, Applicant respectfully submits that Claim 27 patentably distinguishes over Hashimoto I, Hashimoto II, Sugimura, and Baek, either alone or in proper combination.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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